Presented to:

South Coast Air Quality Management District

2024 & 2025 MOU PROGRESS REPORT

Presented by:

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Environmental

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JOHN WAYNE AIRPORT
ORANGE COUNTY

John Wayne Airport, Orange County Annual Report Requirements

MOU Airport Obligation:

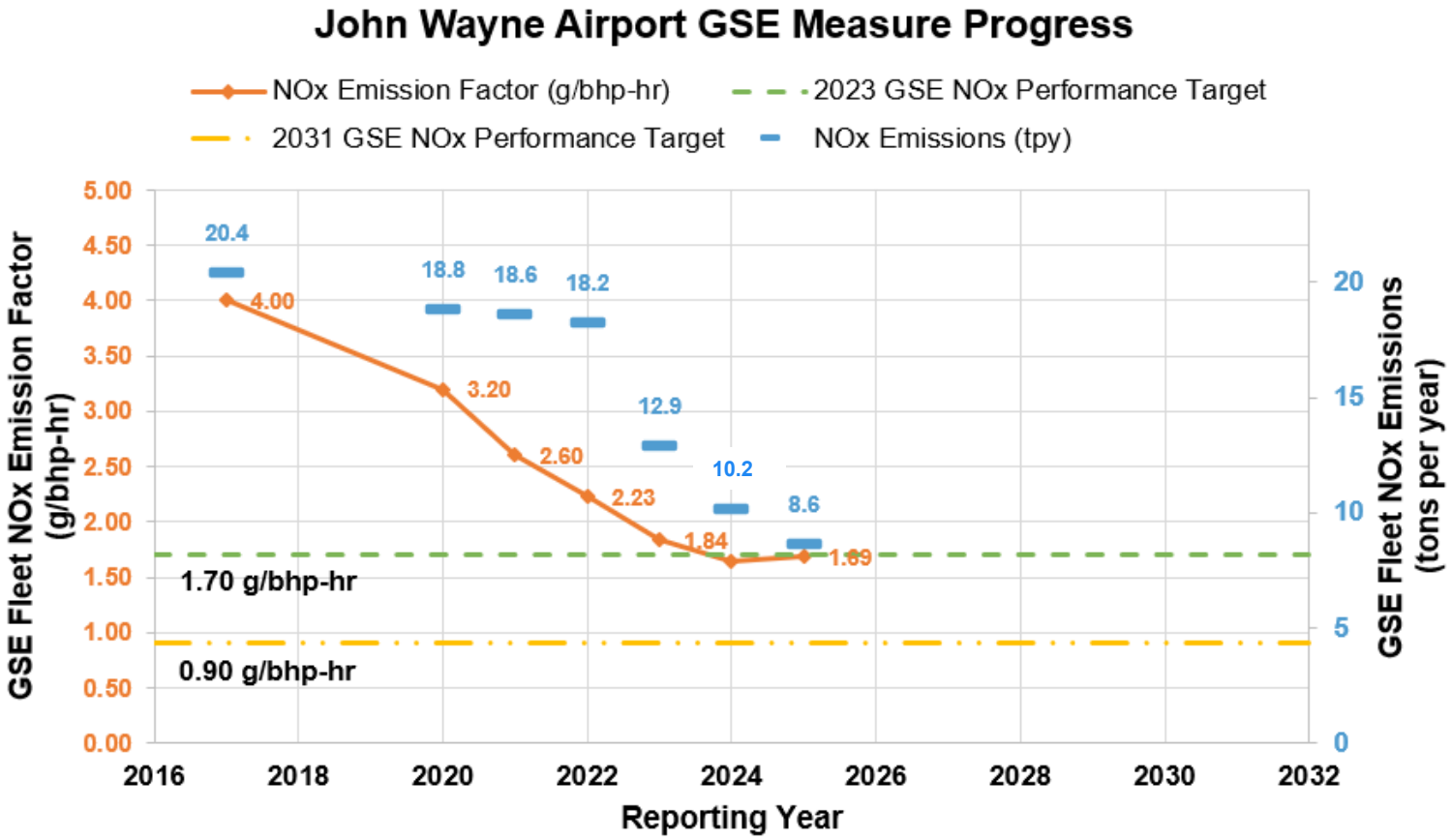
- Report on an annual basis by June 1 for previous calendar year
- Provide information to AQMD as listed in the MOU
- Beginning in 2021, ending 2032
- Three MOU Measures:

  1 - Ground Support Equipment

  2 - Jet Fuel Delivery Trucks

  3 - Parking Shuttle Bus Electrification

MOU Measure 1
Reduce GSE Emissions



- 58% decrease in Total NOx emissions from 2017 Baseline as of 2025
- 58% decrease in Fleet NOx emission factor from 2017 Baseline as of 2025

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GSE Measure 1 Fleet Improvements

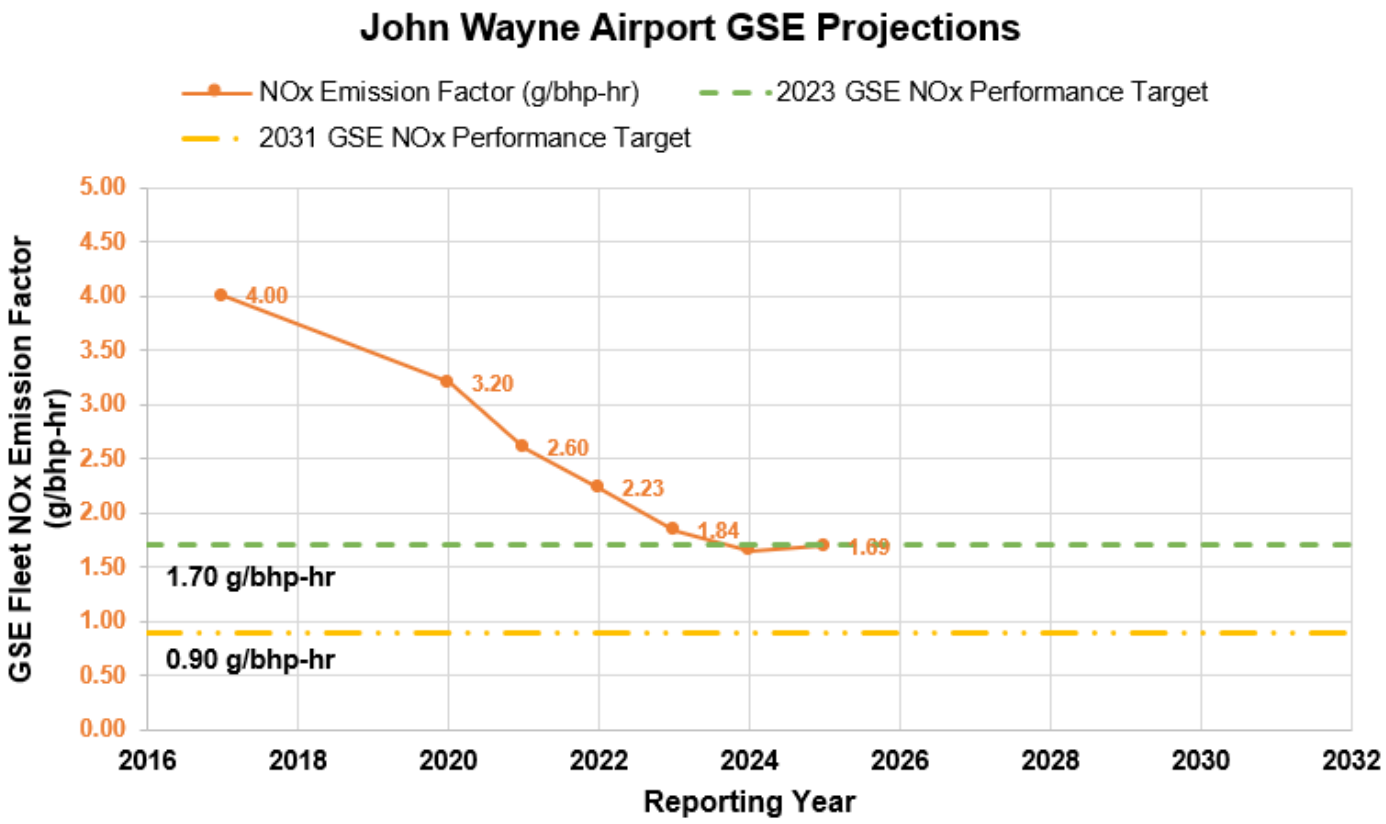
GSE changes since 2017 Baseline year:

- **Removed 26 older diesel**
- **Removed 6 older gasoline**
- **Added 49 electric**

Type	Breakdown	2017	2024	2025	2025 vs 2017
Diesel	Tier 0	11	2	1	**-10**
	Tier 1	21	5	3	**-18**
	Tier 2	4	1	0	**-4**
	Tier 3	7	5	5	**-2**
	Tier 4 Interim	3	3	3	**0**
	Tier 4 Final	11	50	36	**+25**
	TOTAL	57	66	48	**-9**
Gasoline	MY <2001	12	5	5	**-7**
	MY 2001-2006	2	2	2	**0**
	MY 2007-2009	1	3	2	**+1**
	MY >= 2010	16	38	39	**+23**
	TOTAL	31	48	48	**+17**
Electric	TOTAL	96	158	154	**+58 (+60%)**
TOTAL All EQUIPMENT		184	272	250	

MOU Measure 1
GSE Targets and Performance Level Projections

- Engaged with operators to target the oldest GSE, resulting in the net removal of **25** combustion GSE with MY 2010 and older between CY 2023 and 2025.
- The 2023 MOU target continues to be met for CY 2024 and CY 2025:
  - ✓ 2024 - 1.65 g/bhp-hr
  - ✓ 2025 - 1.69 g/bhp-hr



CERTIFIED PASSENGER
AIRLINE LEASE
_____Dated
Between
County of Orange
And
_____

MOU Measure 1 Airline GSE Commitments

- Lease Agreements:
  - MOU emission requirements have been incorporated into each airline lease.
  - Each lease has been executed.
  - Flow down provisions to GSE operators through airline lease.
- Airlines have developed GSE improvement plans and submitted to JWA.
- Many airlines have purchased fast charger systems and are installing upon completion of associated JWA infrastructure upgrades.

MOU Measure 1
Gate Electrification for GSE

Capital Improvement Program

- Existing system-wide Airport electrical infrastructure > 35 years old. While all bridge-gates originally installed with electric for aircraft to plug in and to support GSE electric charging, renovations are required.
- New GSE charger systems require increased electrical capacity to support additional GSE charging.
- Airport implementing phased capital improvements targeting GSE charging needs.

MOU Measure 1
Gate Electrification Improvements

Phase 1 – Electrical upgrades (Year 2023-2025):

- Electrical infrastructure upgrades completed at four gates.
  - Gates that had enough electrical capability and had high emission GSE (older Tiered units).
- GSE operators installed DC Fast chargers
- Allowed retirement of older diesel GSE and operation of electric replacements.

Phase 2 – Upgrades for remaining gates

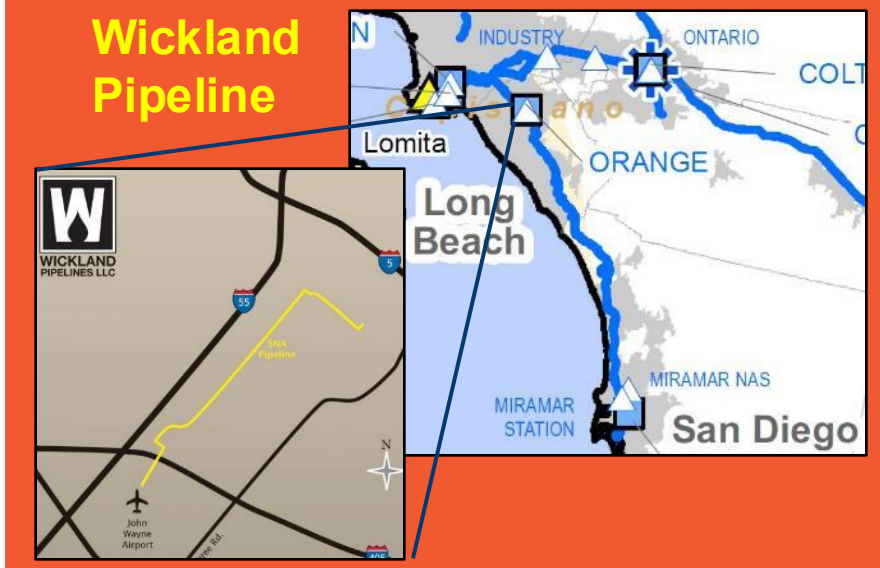
- Funded as part of the Board of Supervisors Approved Airport Capital Improvement Program.
- Design in progress. Construction scheduled for 2026 with expected completion in 2028.
- Subset of a larger $90M+ project to renovate the Airport's Central Utility Plant and entire electrical capacity/distribution system including a microgrid battery storage and renewable energy.
- Will allow JWA GSE operators to meet 2031 target

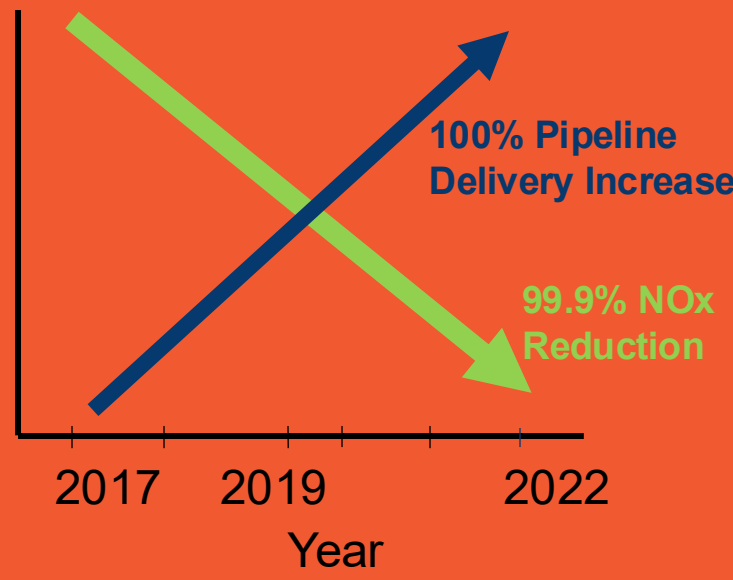
MOU Measure 2 Eliminate/Reduce Jet Fuel Delivery by Tanker Trucks

- Jet fuel pipeline operational as of October 2019.
- Some jet fuel delivery trucks may continue beyond January 1, 2023 due to:
  - existing contracts with a fixed-base operator (FBO) which serves a commercial service airline.
  - emergency fuel deliveries to airlines.
  - pipeline maintenance outages.

MOU Measure 2 Eliminate/Reduce Jet Fuel Delivery by Tanker Trucks

- **Fuel delivery by pipeline continues to reduce through 2024/2025**.
  - **98.9%** (2022)
  - **97.7%** (2023)
  - **99.4%** (2024)
  - **99.9%** (2025)
- **NOx** emissions from fuel delivery trucks in 2025 **reduced 99.9%** from 2017 estimates.
- **Reduction of 7,375 lbs/yr NOx and 309 lbs/year ROG** in 2025 compared to 2017 estimates.
- Transitioned remaining commercial service airline refueling from Fixed Based Operator (FBO) fuel truck deliveries to refueling through the fuel pipeline in 2025. All jet fuel now delivered via pipeline.





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MOU Schedule 3 Electric Shuttle Buses

MOU - Replace 50% of 10 existing CNG buses with electric buses by 2023

- ✓ Five electric buses and associated charging equipment purchased and onsite prior to 2023
- ✓ Bus chargers pending installation
  - JWA design of charger system complete
  - Require new power feed from SCE - Awaiting SCE final power feed upgrades (supply chain delays)
- ✓ Temporary charging installed and began operation in May 2025, with the permanent fast charger system expected to be installed and operational in 2027.

Maintenance and operation of electric buses continues to be challenging due to bankruptcy of bus manufacturer.

For more information:

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